

# Syllabus content

## Section 1: Microeconomics

### 1.1 Competitive markets: Demand and supply

Sub-topic	SL/HL core	HL
<b>Markets</b>		
The nature of markets	<ul style="list-style-type: none"> <li>Outline the meaning of the term market.</li> </ul>	
<b>Demand</b>		
The law of demand	<ul style="list-style-type: none"> <li>Explain the negative causal relationship between price and quantity demanded.</li> <li>Describe the relationship between an individual consumer's demand and market demand.</li> </ul>	
The demand curve	<ul style="list-style-type: none"> <li>Explain that a demand curve represents the relationship between the price and the quantity demanded of a product, <i>ceteris paribus</i>.</li> <li>Draw a demand curve.</li> </ul>	
The non-price determinants of demand (factors that change demand or shift the demand curve)	<ul style="list-style-type: none"> <li>Explain how factors including changes in income (in the cases of normal and inferior goods), preferences, prices of related goods (in the cases of substitutes and complements) and demographic changes may change demand.</li> </ul>	
Movements along and shifts of the demand curve	<ul style="list-style-type: none"> <li>Distinguish between movements along the demand curve and shifts of the demand curve.</li> <li>Draw diagrams to show the difference between movements along the demand curve and shifts of the demand curve.</li> </ul>	

Sub-topic	SL/HL core	HL
Linear demand functions (equations), demand schedules and graphs		<ul style="list-style-type: none"> <li>Explain a demand function (equation) of the form <math>Q_d = a - bP</math>.</li> <li>Plot a demand curve from a linear function (eg. <math>Q_d = 60 - 5P</math>).</li> <li>Identify the slope of the demand curve as the slope of the demand function <math>Q_d = a - bP</math>, that is <math>-b</math> (the coefficient of <math>P</math>).</li> <li>Outline why, if the "a" term changes, there will be a shift of the demand curve.</li> <li>Outline how a change in "b" affects the steepness of the demand curve.</li> </ul>
<b>Supply</b>		
The law of supply	<ul style="list-style-type: none"> <li>Explain the positive causal relationship between price and quantity supplied.</li> <li>Describe the relationship between an individual producer's supply and market supply.</li> </ul>	
The supply curve	<ul style="list-style-type: none"> <li>Explain that a supply curve represents the relationship between the price and the quantity supplied of a product, <i>ceteris paribus</i>.</li> <li>Draw a supply curve.</li> </ul>	
The non-price determinants of supply (factors that change supply or shift the supply curve)	<ul style="list-style-type: none"> <li>Explain how factors including changes in costs of factors of production (land, labour, capital and entrepreneurship), technology, prices of related goods (joint/competitive supply), expectations, indirect taxes and subsidies and the number of firms in the market can change supply.</li> </ul>	

Sub-topic	SL/HL core	HL
Movements along and shifts of the supply curve	<ul style="list-style-type: none"> <li>Distinguish between movements along the supply curve and shifts of the supply curve.</li> <li>Construct diagrams to show the difference between movements along the supply curve and shifts of the supply curve.</li> </ul>	
Linear supply functions, equations and graphs		<ul style="list-style-type: none"> <li>Explain a supply function (equation) of the form <math>Q_s = c + dP</math>.</li> <li>Plot a supply curve from a linear function (eg, <math>Q_s = -30 + 20P</math>).</li> <li>Identify the slope of the supply curve as the slope of the supply function <math>Q_s = c + dP</math>, that is <math>d</math> (the coefficient of <math>P</math>).</li> <li>Outline why, if the “<math>c</math>” term changes, there will be a shift of the supply curve.</li> <li>Outline how a change in “<math>d</math>” affects the steepness of the supply curve.</li> </ul>
<b>Market equilibrium</b>		
Equilibrium and changes to equilibrium	<ul style="list-style-type: none"> <li>Explain, using diagrams, how demand and supply interact to produce market equilibrium.</li> <li>Analyse, using diagrams and with reference to excess demand or excess supply, how changes in the determinants of demand and/or supply result in a new market equilibrium.</li> </ul>	
Calculating and illustrating equilibrium using linear equations		<ul style="list-style-type: none"> <li>Calculate the equilibrium price and equilibrium quantity from linear demand and supply functions.</li> <li>Plot demand and supply curves from linear functions, and identify the equilibrium price and equilibrium quantity.</li> <li>State the quantity of excess demand or excess supply in the above diagrams.</li> </ul>

Sub-topic	SL/HL core	HL
<b>The role of the price mechanism</b>		
Resource allocation	<ul style="list-style-type: none"> <li>Explain why scarcity necessitates choices that answer the “What to produce?” question.</li> <li>Explain why choice results in an opportunity cost.</li> <li>Explain, using diagrams, that price has a signalling function and an incentive function, which result in a reallocation of resources when prices change as a result of a change in demand or supply conditions.</li> </ul>	
<b>Market efficiency</b>		
Consumer surplus	<ul style="list-style-type: none"> <li>Explain the concept of consumer surplus.</li> <li>Identify consumer surplus on a demand and supply diagram.</li> </ul>	
Producer surplus	<ul style="list-style-type: none"> <li>Explain the concept of producer surplus.</li> <li>Identify producer surplus on a demand and supply diagram.</li> </ul>	
Allocative efficiency	<ul style="list-style-type: none"> <li>Explain that the best allocation of resources from society’s point of view is at competitive market equilibrium, where social (community) surplus (consumer surplus and producer surplus) is maximized (marginal benefit = marginal cost).</li> </ul>	

**Theory of knowledge: potential connections**

To what extent is it true to say that a demand curve is a fictional entity?

What assumptions underlie the law of demand? Are these assumptions likely to be true? Does it matter if these assumptions are actually false?

## 1.2 Elasticity

Sub-topic	SL/HL core	HL
<b>Price elasticity of demand (PED)</b>		
Price elasticity of demand and its determinants	<ul style="list-style-type: none"> <li>Explain the concept of price elasticity of demand, understanding that it involves responsiveness of quantity demanded to a change in price, along a given demand curve.</li> <li>Calculate PED using the following equation. <math display="block">PED = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in price}}</math> </li> <li>State that the PED value is treated as if it were positive although its mathematical value is usually negative.</li> <li>Explain, using diagrams and PED values, the concepts of price elastic demand, price inelastic demand, unit elastic demand, perfectly elastic demand and perfectly inelastic demand.</li> <li>Explain the determinants of PED, including the number and closeness of substitutes, the degree of necessity, time and the proportion of income spent on the good.</li> <li>Calculate PED between two designated points on a demand curve using the PED equation above.</li> <li>Explain why PED varies along a straight line demand curve and is not represented by the slope of the demand curve.</li> </ul>	
Applications of price elasticity of demand	<ul style="list-style-type: none"> <li>Examine the role of PED for firms in making decisions regarding price changes and their effect on total revenue.</li> <li>Explain why the PED for many primary commodities is relatively low and the PED for manufactured products is relatively high.</li> <li>Examine the significance of PED for government in relation to indirect taxes.</li> </ul>	
<b>Cross price elasticity of demand (XED)</b>		
Cross price elasticity of demand and its determinants	<ul style="list-style-type: none"> <li>Outline the concept of cross price elasticity of demand, understanding that it involves responsiveness of demand for one good (and hence a shifting demand curve) to a change in the price of another good.</li> <li>Calculate XED using the following equation. <math display="block">XED = \frac{\text{percentage change in quantity demanded of good x}}{\text{percentage change in price of good y}}</math> </li> <li>Show that substitute goods have a positive value of XED and complementary goods have a negative value of XED.</li> <li>Explain that the (absolute) value of XED depends on the closeness of the relationship between two goods.</li> </ul>	

Sub-topic	SL/HL core	HL
Applications of cross price elasticity of demand	<ul style="list-style-type: none"> <li>Examine the implications of XED for businesses if prices of substitutes or complements change.</li> </ul>	
<b>Income elasticity of demand (YED)</b>		
Income elasticity of demand and its determinants	<ul style="list-style-type: none"> <li>Outline the concept of income elasticity of demand, understanding that it involves responsiveness of demand (and hence a shifting demand curve) to a change in income.</li> <li>Calculate YED using the following equation. <math display="block">YED = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in income}}</math> </li> <li>Show that normal goods have a positive value of YED and inferior goods have a negative value of YED.</li> <li>Distinguish, with reference to YED, between necessity (income inelastic) goods and luxury (income elastic) goods.</li> </ul>	
Applications of income elasticity of demand	<ul style="list-style-type: none"> <li>Examine the implications for producers and for the economy of a relatively low YED for primary products, a relatively higher YED for manufactured products and an even higher YED for services.</li> </ul>	
<b>Price elasticity of supply (PES)</b>		
Price elasticity of supply and its determinants	<ul style="list-style-type: none"> <li>Explain the concept of price elasticity of supply, understanding that it involves responsiveness of quantity supplied to a change in price along a given supply curve.</li> <li>Calculate PES using the following equation. <math display="block">PES = \frac{\text{percentage change in quantity supplied}}{\text{percentage change in price}}</math> </li> <li>Explain, using diagrams and PES values, the concepts of elastic supply, inelastic supply, unit elastic supply, perfectly elastic supply and perfectly inelastic supply.</li> <li>Explain the determinants of PES, including time, mobility of factors of production, unused capacity and ability to store stocks.</li> </ul>	
Applications of price elasticity of supply	<ul style="list-style-type: none"> <li>Explain why the PES for primary commodities is relatively low and the PES for manufactured products is relatively high.</li> </ul>	

### 1.3 Government intervention

Sub-topic	SL/HL core	HL
<b>Indirect taxes</b>		
Specific (fixed amount) taxes and <i>ad valorem</i> (percentage) taxes and their impact on markets	<ul style="list-style-type: none"> <li>Explain why governments impose indirect (excise) taxes.</li> <li>Distinguish between specific and <i>ad valorem</i> taxes.</li> <li>Draw diagrams to show specific and <i>ad valorem</i> taxes, and analyse their impacts on market outcomes.</li> <li>Discuss the consequences of imposing an indirect tax on the stakeholders in a market, including consumers, producers and the government.</li> </ul>	
Tax incidence and price elasticity of demand and supply		<ul style="list-style-type: none"> <li>Explain, using diagrams, how the incidence of indirect taxes on consumers and firms differs, depending on the price elasticity of demand and on the price elasticity of supply.</li> <li>Plot demand and supply curves for a product from linear functions and then illustrate and/or calculate the effects of the imposition of a specific tax on the market (on price, quantity, consumer expenditure, producer revenue, government revenue, consumer surplus and producer surplus).</li> </ul>
<b>Subsidies</b>		
Impact on markets	<ul style="list-style-type: none"> <li>Explain why governments provide subsidies, and describe examples of subsidies.</li> <li>Draw a diagram to show a subsidy, and analyse the impacts of a subsidy on market outcomes.</li> <li>Discuss the consequences of providing a subsidy on the stakeholders in a market, including consumers, producers and the government.</li> </ul>	<ul style="list-style-type: none"> <li>Plot demand and supply curves for a product from linear functions and then illustrate and/or calculate the effects of the provision of a subsidy on the market (on price, quantity, consumer expenditure, producer revenue, government expenditure, consumer surplus and producer surplus).</li> </ul>

Sub-topic	SL/HL core	HL
<b>Price controls</b>		
Price ceilings (maximum prices): rationale, consequences and examples	<ul style="list-style-type: none"> <li>Explain why governments impose price ceilings, and describe examples of price ceilings, including food price controls and rent controls.</li> <li>Draw a diagram to show a price ceiling, and analyse the impacts of a price ceiling on market outcomes.</li> <li>Examine the possible consequences of a price ceiling, including shortages, inefficient resource allocation, welfare impacts, underground parallel markets and non-price rationing mechanisms.</li> <li>Discuss the consequences of imposing a price ceiling on the stakeholders in a market, including consumers, producers and the government.</li> </ul>	<ul style="list-style-type: none"> <li>Calculate possible effects from the price ceiling diagram, including the resulting shortage and the change in consumer expenditure (which is equal to the change in firm revenue).</li> </ul>
Price floors (minimum prices): rationale, consequences and examples	<ul style="list-style-type: none"> <li>Explain why governments impose price floors, and describe examples of price floors, including price support for agricultural products and minimum wages.</li> <li>Draw a diagram of a price floor, and analyse the impacts of a price floor on market outcomes.</li> <li>Examine the possible consequences of a price floor, including surpluses and government measures to dispose of the surpluses, inefficient resource allocation and welfare impacts.</li> <li>Discuss the consequences of imposing a price floor on the stakeholders in a market, including consumers, producers and the government.</li> </ul>	<ul style="list-style-type: none"> <li>Calculate possible effects from the price floor diagram, including the resulting surplus, the change in consumer expenditure, the change in producer revenue, and government expenditure to purchase the surplus.</li> </ul>



**Theory of knowledge: potential connections**

In what sense are we morally obliged to pay taxes? Is this the result of a promise that we have made ourselves? When was this promise made? (Make a distinction here between moral and legal obligations.)

To what extent is government morally obliged to provide healthcare and welfare benefits to the unemployed?

**1.4 Market failure**

Sub-topic	SL/HL core	HL
<b>The meaning of market failure</b>		
Market failure as a failure to allocate resources efficiently	<ul style="list-style-type: none"> <li>Analyse the concept of market failure as a failure of the market to achieve allocative efficiency, resulting in an over-allocation of resources (over-provision of a good) or an under-allocation of resources (under-provision of a good)</li> </ul>	
<b>Types of market failure</b>		
The meaning of externalities	<ul style="list-style-type: none"> <li>Describe the concepts of marginal private benefits (MPB), marginal social benefits (MSB), marginal private costs (MPC) and marginal social costs (MSC).</li> <li>Describe the meaning of externalities as the failure of the market to achieve a social optimum where <math>MSB = MSC</math>.</li> </ul>	
Negative externalities of production and consumption	<ul style="list-style-type: none"> <li>Explain, using diagrams and examples, the concepts of negative externalities of production and consumption, and the welfare loss associated with the production or consumption of a good or service.</li> <li>Explain that demerit goods are goods whose consumption creates external costs.</li> </ul>	

Sub-topic	SL/HL core	HL
	<ul style="list-style-type: none"> <li>Evaluate, using diagrams, the use of policy responses, including market-based policies (taxation and tradable permits), and government regulations, to the problem of negative externalities of production and consumption</li> </ul>	
Positive externalities of production and consumption	<ul style="list-style-type: none"> <li>Explain, using diagrams and examples, the concepts of positive externalities of production and consumption, and the welfare loss associated with the production or consumption of a good or service.</li> <li>Explain that merit goods are goods whose consumption creates external benefits.</li> <li>Evaluate, using diagrams, the use of government responses, including subsidies, legislation, advertising to influence behaviour, and direct provision of goods and services.</li> </ul>	
Lack of public goods	<ul style="list-style-type: none"> <li>Using the concepts of rivalry and excludability, and providing examples, distinguish between public goods (non-rivalrous and non-excludable) and private goods (rivalrous and excludable).</li> <li>Explain, with reference to the free rider problem, how the lack of public goods indicates market failure.</li> <li>Discuss the implications of the direct provision of public goods by government.</li> </ul>	

Sub-topic	SL/HL core	HL
Common access resources and the threat to sustainability	<ul style="list-style-type: none"> <li>Describe, using examples, common access resources.</li> <li>Describe sustainability.</li> <li>Explain that the lack of a pricing mechanism for common access resources means that these goods may be overused/depleted/degraded as a result of activities of producers and consumers who do not pay for the resources that they use, and that this poses a threat to sustainability.</li> <li>Explain, using negative externalities diagrams, that economic activity requiring the use of fossil fuels to satisfy demand poses a threat to sustainability.</li> <li>Explain that the existence of poverty in economically less developed countries creates negative externalities through over-exploitation of land for agriculture, and that this poses a threat to sustainability.</li> <li>Evaluate, using diagrams, possible government responses to threats to sustainability, including legislation, carbon taxes, cap and trade schemes, and funding for clean technologies.</li> <li>Explain, using examples, that government responses to threats to sustainability are limited by the global nature of the problems and the lack of ownership of common access resources, and that effective responses require international cooperation.</li> </ul>	

Sub-topic	SL/HL core	HL
Asymmetric information		<ul style="list-style-type: none"> <li>Explain, using examples, that market failure may occur when one party in an economic transaction (either the buyer or the seller) possesses more information than the other party.</li> <li>Evaluate possible government responses, including legislation, regulation and provision of information.</li> </ul>
Abuse of monopoly power		<ul style="list-style-type: none"> <li>Explain how monopoly power can create a welfare loss and is therefore a type of market failure.</li> <li>Discuss possible government responses, including legislation, regulation, nationalization and trade liberalization.</li> </ul>

#### Theory of knowledge: potential connections

To what extent is the obligation to seek sustainable modes of consumption a moral one?

What knowledge issues are involved in assessing the role of technology in meeting future patterns of consumption and decreasing the negative externalities of consumption associated with fossil fuels?

What are the knowledge issues involved in determining what is a rational cost to pay for halting climate change?

How could we know if economically more developed countries are morally justified in interfering in the development of economically less developed countries on the grounds of climate change?

How can we know when climate change is sufficiently serious to warrant government interfering in the freedom of its citizens to consume?

How can we calculate the external costs of producing and running items such as light bulbs or motor vehicles? For example, low energy light bulbs consume less energy but they require more energy to produce, and some brands contain materials that are harmful to the environment such as mercury. Hybrid cars consume less energy to run but consume more energy to produce.

What are the problems in knowing whether climate change is produced by human activity?

## 1.5 Theory of the firm and market structures (HL only)

Sub-topic	SL/HL core	HL
<b>Production and costs</b>		
Production in the short run: the law of diminishing returns		<ul style="list-style-type: none"> <li>Distinguish between the short run and long run in the context of production.</li> <li>Define total product, average product and marginal product, and construct diagrams to show their relationship.</li> <li>Explain the law of diminishing returns.</li> <li>Calculate total, average and marginal product from a set of data and/or diagrams.</li> </ul>
Costs of production: economic costs		<ul style="list-style-type: none"> <li>Explain the meaning of economic costs as the opportunity cost of all resources employed by the firm (including entrepreneurship).</li> <li>Distinguish between explicit costs and implicit costs as the two components of economic costs.</li> </ul>
Costs of production in the short run		<ul style="list-style-type: none"> <li>Explain the distinction between the short run and the long run, with reference to fixed costs and variable costs.</li> <li>Distinguish between total costs, marginal costs and average costs.</li> <li>Draw diagrams illustrating the relationship between marginal costs and average costs, and explain the connection with production in the short run.</li> </ul>

Sub-topic	SL/HL core	HL
		<ul style="list-style-type: none"> <li>Explain the relationship between the product curves (average product and marginal product) and the cost curves (average variable cost and marginal cost), with reference to the law of diminishing returns.</li> <li>Calculate total fixed costs, total variable costs, total costs, average fixed costs, average variable costs, average total costs and marginal costs from a set of data and/or diagrams.</li> </ul>
Production in the long run: returns to scale		<ul style="list-style-type: none"> <li>Distinguish between increasing returns to scale, decreasing returns to scale and constant returns to scale.</li> </ul>
Costs of production in the long run		<ul style="list-style-type: none"> <li>Outline the relationship between short-run average costs and long-run average costs.</li> <li>Explain, using a diagram, the reason for the shape of the long-run average total cost curve.</li> <li>Describe factors giving rise to economies of scale, including specialization, efficiency, marketing and indivisibilities.</li> <li>Describe factors giving rise to diseconomies of scale, including problems of coordination and communication.</li> </ul>
<b>Revenues</b>		
Total revenue, average revenue and marginal revenue		<ul style="list-style-type: none"> <li>Distinguish between total revenue, average revenue and marginal revenue.</li> <li>Illustrate, using diagrams, the relationship between total revenue, average revenue and marginal revenue.</li> <li>Calculate total revenue, average revenue and marginal revenue from a set of data and/or diagrams.</li> </ul>

Sub-topic	SL/HL core	HL
<b>Profit</b>		
Economic profit (sometimes known as supernormal profit or abnormal profit) and normal profit (zero economic profit occurring at the break-even point)		<ul style="list-style-type: none"> <li>Describe economic profit as the case where total revenue exceeds economic cost.</li> <li>Describe normal profit as the amount of revenue needed to cover the costs of employing self-owned resources (implicit costs, including entrepreneurship) or the amount of revenue needed to just keep the firm in business.</li> <li>Explain that economic profit is profit over and above normal profit, and that the firm earns normal profit when economic profit is zero.</li> <li>Explain why a firm will continue to operate even when it earns zero economic profit.</li> <li>Explain the meaning of loss as negative economic profit arising when total revenue is less than total cost.</li> <li>Calculate different profit levels from a set of data and/or diagrams.</li> </ul>
<b>Goals of firms</b>		
Profit maximization		<ul style="list-style-type: none"> <li>Explain the goal of profit maximization where the difference between total revenue and total cost is maximized or where marginal revenue equals marginal cost.</li> </ul>
Alternative goals of firms		<ul style="list-style-type: none"> <li>Describe alternative goals of firms, including revenue maximization, growth maximization, satisficing and corporate social responsibility.</li> </ul>
<b>Perfect competition</b>		
Assumptions of the model		<ul style="list-style-type: none"> <li>Describe, using examples, the assumed characteristics of perfect competition: a large number of firms; a homogeneous product; freedom of entry and exit; perfect information; perfect resource mobility.</li> </ul>

Sub-topic	SL/HL core	HL
Revenue curves		<ul style="list-style-type: none"> <li>Explain, using a diagram, the shape of the perfectly competitive firm's average revenue and marginal revenue curves, indicating that the assumptions of perfect competition imply that each firm is a price taker.</li> <li>Explain, using a diagram, that the perfectly competitive firm's average revenue and marginal revenue curves are derived from market equilibrium for the industry.</li> </ul>
Profit maximization in the short run		<ul style="list-style-type: none"> <li>Explain, using diagrams, that it is possible for a perfectly competitive firm to make economic profit (supernormal profit), normal profit or negative economic profit in the short run based on the marginal cost and marginal revenue profit maximization rule.</li> </ul>
Profit maximization in the long run		<ul style="list-style-type: none"> <li>Explain, using a diagram, why, in the long run, a perfectly competitive firm will make normal profit.</li> <li>Explain, using a diagram, how a perfectly competitive market will move from short-run equilibrium to long-run equilibrium.</li> </ul>
Shut-down price and break-even price		<ul style="list-style-type: none"> <li>Distinguish between the short run shut-down price and the break-even price.</li> <li>Explain, using a diagram, when a loss-making firm would shut down in the short run.</li> <li>Explain, using a diagram, when a loss-making firm would shut down and exit the market in the long run.</li> <li>Calculate the short run shut-down price and the break-even price from a set of data</li> </ul>



Sub-topic	SL/HL core	HL
Efficiency		<ul style="list-style-type: none"> <li>Explain the meaning of the term allocative efficiency.</li> <li>Explain that the condition for allocative efficiency is <math>P = MC</math> (or, with externalities, <math>MSB = MSC</math>).</li> <li>Explain, using a diagram, why a perfectly competitive market leads to allocative efficiency in both the short run and the long run.</li> <li>Explain the meaning of the term productive/technical efficiency.</li> <li>Explain that the condition for productive efficiency is that production takes place at minimum average total cost.</li> <li>Explain, using a diagram, why a perfectly competitive firm will be productively efficient in the long run, though not necessarily in the short run.</li> </ul>
<b>Monopoly</b>		
Assumptions of the model		<ul style="list-style-type: none"> <li>Describe, using examples, the assumed characteristics of a monopoly: a single or dominant firm in the market; no close substitutes; significant barriers to entry.</li> </ul>
Barriers to entry		<ul style="list-style-type: none"> <li>Describe, using examples, barriers to entry, including economies of scale, branding and legal barriers.</li> </ul>
Revenue curves		<ul style="list-style-type: none"> <li>Explain that the average revenue curve for a monopolist is the market demand curve, which will be downward sloping.</li> <li>Explain, using a diagram, the relationship between demand, average revenue and marginal revenue in a monopoly.</li> <li>Explain why a monopolist will never choose to operate on the inelastic portion of its average revenue curve.</li> </ul>

Sub-topic	SL/HL core	HL
Profit maximization		<ul style="list-style-type: none"> <li>Explain, using a diagram, the short- and long-run equilibrium output and pricing decision of a profit maximizing (loss minimizing) monopolist, identifying the firm's economic profit (or losses).</li> <li>Explain the role of barriers to entry in permitting the firm to earn economic profit.</li> </ul>
Revenue maximization		<ul style="list-style-type: none"> <li>Explain, using a diagram, the output and pricing decision of a revenue maximizing monopoly firm.</li> <li>Compare and contrast, using a diagram, the equilibrium positions of a profit maximizing monopoly firm and a revenue maximizing monopoly firm.</li> <li>Calculate from a set of data and/or diagrams the revenue maximizing level of output.</li> </ul>
Natural monopoly		<ul style="list-style-type: none"> <li>With reference to economies of scale, and using examples, explain the meaning of the term "natural monopoly".</li> <li>Draw a diagram illustrating a natural monopoly.</li> </ul>
Monopoly and efficiency		<ul style="list-style-type: none"> <li>Explain, using diagrams, why the profit maximizing choices of a monopoly firm lead to allocative inefficiency (welfare loss) and productive inefficiency.</li> <li>Explain why, despite inefficiencies, a monopoly may be considered desirable for a variety of reasons, including the ability to finance research and development (R&amp;D) from economic profits, the need to innovate to maintain economic profit, and the possibility of economies of scale.</li> </ul>

Sub-topic	SL/HL core	HL
Policies to regulate monopoly power		<ul style="list-style-type: none"> <li>Evaluate the role of legislation and regulation in reducing monopoly power.</li> </ul>
The advantages and disadvantages of monopoly compared with perfect competition		<ul style="list-style-type: none"> <li>Draw diagrams and use them to compare and contrast a monopoly market with a perfectly competitive market, with reference to factors including efficiency, price and output, research and development (R&amp;D) and economies of scale.</li> </ul>
<b>Monopolistic competition</b>		
Assumptions of the model		<ul style="list-style-type: none"> <li>Describe, using examples, the assumed characteristics of a monopolistic competition: a large number of firms; differentiated products; absence of barriers to entry and exit.</li> </ul>
Revenue curves		<ul style="list-style-type: none"> <li>Explain that product differentiation leads to a small degree of monopoly power and therefore to a negatively sloping demand curve for the product.</li> </ul>
Profit maximization in the short run		<ul style="list-style-type: none"> <li>Explain, using a diagram, the short-run equilibrium output and pricing decisions of a profit maximizing (loss minimizing) firm in monopolistic competition, identifying the firm's economic profit (or loss).</li> </ul>
Profit maximization in the long run		<ul style="list-style-type: none"> <li>Explain, using diagrams, why in the long run a firm in monopolistic competition will make normal profit.</li> </ul>
Non-price competition		<ul style="list-style-type: none"> <li>Distinguish between price competition and non-price competition.</li> <li>Describe examples of non-price competition, including advertising, packaging, product development and quality of service.</li> </ul>

Sub-topic	SL/HL core	HL
Monopolistic competition and efficiency		<ul style="list-style-type: none"> <li>Explain, using a diagram, why neither allocative efficiency nor productive efficiency are achieved by monopolistically competitive firms.</li> </ul>
Monopolistic competition compared with perfect competition and monopoly		<ul style="list-style-type: none"> <li>Compare and contrast, using diagrams, monopolistic competition with perfect competition, and monopolistic competition with monopoly, with reference to factors including short run, long run, market power, allocative and productive efficiency, number of producers, economies of scale, ease of entry and exit, size of firms and product differentiation.</li> </ul>
<b>Oligopoly</b>		
Assumptions of the model		<ul style="list-style-type: none"> <li>Describe, using examples, the assumed characteristics of an oligopoly: the dominance of the industry by a small number of firms; the importance of interdependence; differentiated or homogeneous products; high barriers to entry.</li> <li>Explain why interdependence is responsible for the dilemma faced by oligopolistic firms—whether to compete or to collude.</li> <li>Explain how a concentration ratio may be used to identify an oligopoly.</li> </ul>
Game theory		<ul style="list-style-type: none"> <li>Explain how game theory (the simple prisoner's dilemma) can illustrate strategic interdependence and the options available to oligopolies.</li> </ul>

Sub-topic	SL/HL core	HL
Open/formal collusion		<ul style="list-style-type: none"> <li>• Explain the term “collusion”, give examples, and state that it is usually (in most countries) illegal.</li> <li>• Explain the term “cartel”.</li> <li>• Explain that the primary goal of a cartel is to limit competition between member firms and to maximize joint profits as if the firms were collectively a monopoly.</li> <li>• Explain the incentive of cartel members to cheat.</li> <li>• Analyse the conditions that make cartel structures difficult to maintain.</li> </ul>
Tacit/informal collusion		<ul style="list-style-type: none"> <li>• Describe the term “tacit collusion”, including reference to price leadership by a dominant firm.</li> </ul>
Non-collusive oligopoly		<ul style="list-style-type: none"> <li>• Explain that the behaviour of firms in a non-collusive oligopoly is strategic in order to take account of possible actions by rivals.</li> <li>• Explain, using a diagram, the existence of price rigidities, with reference to the kinked demand curve.</li> <li>• Explain why non-price competition is common in oligopolistic markets, with reference to the risk of price wars.</li> <li>• Describe, using examples, types of non-price competition.</li> </ul>
<b>Price discrimination</b>		
Necessary conditions for the practice of price discrimination		<ul style="list-style-type: none"> <li>• Describe price discrimination as the practice of charging different prices to different consumer groups for the same product, where the price difference is not justified by differences in cost.</li> </ul>

Sub-topic	SL/HL core	HL
		<ul style="list-style-type: none"> <li>Explain that price discrimination may only take place if all of the following conditions exist: the firm must possess some degree of market power; there must be groups of consumers with differing price elasticities of demand for the product; the firm must be able to separate groups to ensure that no resale of the product occurs.</li> <li>Draw a diagram to illustrate how a firm maximizes profit in third degree price discrimination, explaining why the higher price is set in the market with the relatively more inelastic demand.</li> </ul>

**Theory of knowledge: potential connections**

Is it rational to take into account costs already incurred in deciding whether a business venture should be terminated or whether it should receive more funds?

How can we know how to determine the balance of government policy between promoting competition in the interest of the consumer and allowing profitability in the interest of firms?

## Section 2: Macroeconomics

### 2.1 The level of overall economic activity

Sub-topic	SL/HL core	HL
<b>Economic activity</b>		
The circular flow of income model	<ul style="list-style-type: none"> <li>Describe, using a diagram, the circular flow of income between households and firms in a closed economy with no government.</li> <li>Identify the four factors of production and their respective payments (rent, wages, interest and profit) and explain that these constitute the income flow in the model.</li> </ul>	

Sub-topic	SL/HL core	HL
	<ul style="list-style-type: none"> <li>Outline that the income flow is numerically equivalent to the expenditure flow and the value of output flow.</li> <li>Describe, using a diagram, the circular flow of income in an open economy with government and financial markets, referring to leakages/withdrawals (savings, taxes and import expenditure) and injections (investment, government expenditure and export revenue).</li> <li>Explain how the size of the circular flow will change depending on the relative size of injections and leakages.</li> </ul>	
Measures of economic activity: gross domestic product (GDP), and gross national product (GNP) or gross national income (GNI)	<ul style="list-style-type: none"> <li>Distinguish between GDP and GNP/GNI as measures of economic activity.</li> <li>Distinguish between the nominal value of GDP and GNP/GNI and the real value of GDP and GNP/GNI.</li> <li>Distinguish between total GDP and GNP/GNI and per capita GDP and GNP/GNI.</li> <li>Examine the output approach, the income approach and the expenditure approach when measuring national income.</li> <li>Evaluate the use of national income statistics, including their use for making comparisons over time, their use for making comparisons between countries and their use for making conclusions about standards of living.</li> <li>Explain the meaning and significance of “green GDP”, a measure of GDP that accounts for environmental destruction.</li> </ul>	<ul style="list-style-type: none"> <li>Calculate nominal GDP from sets of national income data, using the expenditure approach.</li> <li>Calculate GNP/GNI from data</li> <li>Calculate real GDP, using a price deflator.</li> </ul>

Sub-topic	SL/HL core	HL
<b>The business cycle</b>		
Short-term fluctuations and long-term trend	<ul style="list-style-type: none"> <li>Explain, using a business cycle diagram, that economies typically tend to go through a cyclical pattern characterized by the phases of the business cycle.</li> <li>Explain the long-term growth trend in the business cycle diagram as the potential output of the economy.</li> <li>Distinguish between a decrease in GDP and a decrease in GDP growth.</li> </ul>	

**Theory of knowledge: potential connections**

What is the empirical evidence for the existence of the business cycle? How do we decide whether this evidence is sufficient?

## 2.2 Aggregate demand and aggregate supply

Sub-topic	SL/HL core	HL
<b>Aggregate demand (AD)</b>		
The AD curve	<ul style="list-style-type: none"> <li>Distinguish between the microeconomic concept of demand for a product and the macroeconomic concept of aggregate demand.</li> <li>Construct an aggregate demand curve.</li> <li>Explain why the AD curve has a negative slope.</li> </ul>	
The components of AD	<ul style="list-style-type: none"> <li>Describe consumption, investment, government spending and net exports as the components of aggregate demand.</li> </ul>	



Sub-topic	SL/HL core	HL
The determinants of AD or causes of shifts in the AD curve	<ul style="list-style-type: none"> <li>Explain how the AD curve can be shifted by changes in consumption due to factors including changes in consumer confidence, interest rates, wealth, personal income taxes (and hence disposable income) and level of household indebtedness.</li> <li>Explain how the AD curve can be shifted by changes in investment due to factors including interest rates, business confidence, technology, business taxes and the level of corporate indebtedness.</li> <li>Explain how the AD curve can be shifted by changes in government spending due to factors including political and economic priorities.</li> <li>Explain how the AD curve can be shifted by changes in net exports due to factors including the income of trading partners, exchange rates and changes in the level of protectionism.</li> </ul>	
<b>Aggregate supply (AS)</b>		
The meaning of aggregate supply	<ul style="list-style-type: none"> <li>Describe the term aggregate supply.</li> <li>Explain, using a diagram, why the short-run aggregate supply curve (SRAS curve) is upward sloping.</li> <li>Explain, using a diagram, how the AS curve in the short run (SRAS) can shift due to factors including changes in resource prices, changes in business taxes and subsidies and supply shocks.</li> </ul>	

Sub-topic	SL/HL core	HL
		<ul style="list-style-type: none"> <li>Discuss, using a diagram, the view that there is a long-run Phillips curve that is vertical at the natural rate of unemployment and therefore there is no trade-off between the unemployment rate and the inflation rate in the long run.</li> <li>Explain that the natural rate of unemployment is the rate of unemployment that exists when the economy is producing at the full employment level of output.</li> </ul>
<b>Economic growth</b>		
The meaning of economic growth	<ul style="list-style-type: none"> <li>Define economic growth as an increase in real GDP.</li> </ul>	<ul style="list-style-type: none"> <li>Calculate the rate of economic growth from a set of data.</li> </ul>
Causes of economic growth	<ul style="list-style-type: none"> <li>Describe, using a production possibilities curve (PPC) diagram, economic growth as an increase in actual output caused by factors including a reduction in unemployment and increases in productive efficiency, leading to a movement of a point inside the PPC to a point closer to the PPC.</li> <li>Describe, using a PPC diagram, economic growth as an increase in production possibilities caused by factors including increases in the quantity and quality of resources, leading to outward PPC shifts.</li> <li>Describe, using an LRAS diagram, economic growth as an increase in potential output caused by factors including increases in the quantity and quality of resources, leading to a rightward shift of the LRAS curve.</li> </ul>	

## External assessment markbands—SL and HL

### Paper 1 (SL/HL)

#### Section A and section B

##### Part (a)

Level	Level descriptor	Marks 0–10
0	The work does not reach a standard described by the descriptors below.	0
1	There is little understanding of the specific demands of the question. Relevant economic terms are not defined. There is very little knowledge of relevant economic theory. There are significant errors.	1–3
2	There is some understanding of the specific demands of the question. Some relevant economic terms are defined. There is some knowledge of relevant economic theory. There are some errors.	4–6
3	There is understanding of the specific demands of the question. Relevant economic terms are defined. Relevant economic theory is explained and applied. Where appropriate, diagrams are included and applied. Where appropriate, examples are used. There are few errors.	7–8
4	There is clear understanding of the specific demands of the question. Relevant economic terms are clearly defined. Relevant economic theory is clearly explained and applied. Where appropriate, diagrams are included and applied effectively. Where appropriate, examples are used effectively. There are no significant errors.	9–10

**Section A and section B****Part (b)**

Level	Level descriptor	Marks 0–15
0	The work does not reach a standard described by the descriptors below.	0
1	There is little understanding of the specific demands of the question. Relevant economic terms are not defined. There is very little knowledge of relevant economic theory. There are significant errors.	1–5
2	There is some understanding of the specific demands of the question. Some relevant economic terms are defined. There is some knowledge of relevant economic theory. There are some errors.	6–9
3	There is understanding of the specific demands of the question. Relevant economic terms are defined. Relevant economic theory is explained and applied. Where appropriate, diagrams are included and applied. Where appropriate, examples are used. There is an attempt at synthesis or evaluation. There are few errors.	10–12
4	There is clear understanding of the specific demands of the question. Relevant economic terms are clearly defined. Relevant economic theory is clearly explained and applied. Where appropriate, diagrams are included and applied effectively. Where appropriate, examples are used effectively. There is evidence of appropriate synthesis or evaluation. There are no significant errors.	13–15

## Paper 2 (SL/HL)

### Section A and section B

#### Part (a): (i) and (ii)

Level	Level descriptor	Marks 0–2
0	The work does not reach a standard described by the descriptors below.	0
1	There is limited understanding <b>or</b> vague definition.	1
2	There is clear understanding <b>or</b> accurate definition.	2

#### Part (b) and part (c)

Level	Level descriptor	Marks 0–4
0	The work does not reach a standard described by the descriptors below.	0
1	The written response is limited.	1–2
2	The written response is accurate.	3–4

Or

Level	Level descriptor	Marks 0–4
0	The work does not reach a standard described by the descriptors below.	0
1	There is a correct diagram <b>or</b> an accurate written response.	1–2
2	There is a correct diagram <b>and</b> an accurate written response.	3–4

#### Part (d)

Level	Level descriptor	Marks 0–8
0	The work does not reach a standard described by the descriptors below.	0
1	Few relevant concepts are recognized. There is basic knowledge/understanding.	1–2
2	Relevant concepts are recognized and developed in reasonable depth. There is clear knowledge/understanding. There is some attempt at application/analysis.	3–5
3	Relevant concepts are recognized and developed in reasonable depth. There is clear knowledge/understanding. There is effective application/analysis. There is synthesis/evaluation, supported by appropriate theory and evidence.	6–8

# Glossary of command terms

## Command terms with definitions

Students should be familiar with the following key terms and phrases used in examination questions, which are to be understood as described below. Although these terms will be used frequently in examination questions, other terms may be used to direct students to present an argument in a specific way.

The assessment objectives (AOs) listed in the table are those referred to in the economics syllabus.

Command term:		Definition asks students to:
<b>Analyse</b>	AO2	Break down in order to bring out the essential elements or structure.
<b>Apply</b>	AO2	Use an idea, equation, principle, theory or law in relation to a given problem or issue.
<b>Calculate</b>	AO4	Obtain a numerical answer showing the relevant stages in the working.
<b>Comment</b>	AO2	Give a judgment based on a given statement or result of a calculation.
<b>Compare</b>	AO3	Give an account of the similarities between two (or more) items or situations, referring to both (all) of them throughout.
<b>Compare and contrast</b>	AO3	Give an account of similarities and differences between two (or more) items or situations, referring to both (all) of them throughout.
<b>Construct</b>	AO4	Display information in a diagrammatic or logical form.
<b>Contrast</b>	AO3	Give an account of the differences between two (or more) items or situations, referring to both (all) of them throughout.
<b>Define</b>	AO1	Give the precise meaning of a word, phrase, concept or physical quantity.
<b>Derive</b>	AO4	Manipulate a mathematical relationship to give a new equation or relationship.
<b>Describe</b>	AO1	Give a detailed account.
<b>Determine</b>	AO4	Obtain the only possible answer.
<b>Discuss</b>	AO3	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.

<b>Distinguish</b>	AO2	Make clear the differences between two or more concepts or items.
<b>Draw</b>	AO4	Represent by means of a labelled, accurate diagram or graph, using a pencil. A ruler (straight edge) should be used for straight lines. Diagrams should be drawn to scale. Graphs should have points correctly plotted (if appropriate) and joined in a straight line or smooth curve.
<b>Evaluate</b>	AO3	Make an appraisal by weighing up the strengths and limitations.
<b>Examine</b>	AO3	Consider an argument or concept in a way that uncovers the assumptions and interrelationships of the issue.
<b>Explain</b>	AO2	Give a detailed account including reasons or causes.
<b>Identify</b>	AO4	Provide an answer from a number of possibilities.
<b>Justify</b>	AO3	Give valid reasons or evidence to support an answer or conclusion.
<b>Label</b>	AO4	Add labels to a diagram.
<b>List</b>	AO1	Give a sequence of brief answers with no explanation.
<b>Measure</b>	AO4	Obtain a value for a quantity.
<b>Outline</b>	AO1	Give a brief account or summary.
<b>Plot</b>	AO4	Mark the position of points on a diagram.
<b>Show</b>	AO4	Give the steps in a calculation or derivation.
<b>Show that</b>	AO4	Obtain the required result (possibly using information given) without the formality of proof. "Show that" questions do not generally require the use of a calculator.
<b>Sketch</b>	AO4	Represent by means of a diagram or graph (labelled as appropriate). The sketch should give a general idea of the required shape or relationship, and should include relevant features.
<b>Solve</b>	AO4	Obtain the answer(s) using algebraic and/or numerical and/or graphical methods.
<b>State</b>	AO1	Give a specific name, value or other brief answer without explanation or calculation.
<b>Suggest</b>	AO2	Propose a solution, hypothesis or other possible answer.
<b>To what extent</b>	AO3	Consider the merits or otherwise of an argument or concept. Opinions and conclusions should be presented clearly and supported with appropriate evidence and sound argument.